

GAO

## Testimony

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# NUCLEAR WASTE

## Schedule, Cost, and Management Issues at DOE's Hanford Tank Waste Project

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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss one of the most difficult challenges facing the Department of Energy—cleaning up the waste in the 177 underground storage tanks at Hanford that hold highly radioactive liquid waste, sludge, and other materials. Cleaning up this waste is important because it poses a significant risk to the environment and to surrounding communities. Recently, DOE disclosed that waste leaking from some of the tanks has reached the groundwater and threatens the nearby Columbia River.

To begin treating the waste, in 1996, DOE decided it would purchase waste treatment services through competitively awarded, fixed-price contracts to demonstrate treatment technologies and treat at least 6 percent of the waste. Under these contracts, competing contractors would finance, design, build, and operate temporary waste processing facilities and be paid on a per-unit basis if they successfully immobilized the waste for storage. DOE referred to this approach as its privatization strategy. However, on August 24, 1998, DOE signed a contract with only one contractor—BNFL, Inc. (BNFL),<sup>1</sup> a subsidiary of British Nuclear Fuels, plc., to design, build, and operate permanent facilities to treat about 10 percent of Hanford's tank waste.

In view of the billions of dollars that the government will spend treating this waste, you requested that we assess the implications of DOE's revised approach. Our testimony today discusses (1) how DOE's current approach has changed from its original privatization strategy; (2) how this change has affected the project's schedule, cost, and estimated savings over conventional DOE approaches; (3) what risks DOE is now assuming with this change in approach; and (4) what steps DOE is taking to carry out its responsibilities for overseeing the project.

In summary, we found the following:

- The project as currently envisioned is substantially different from DOE's 1996 initial privatization strategy. The most significant changes include eliminating further competition between contractors, building permanent facilities that could operate for 30 years or more instead of temporary facilities, and extending by 2 years the design phase and the dates for completing project financing arrangements and agreeing on the final

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<sup>1</sup>DOE and BNFL signed a modification to an existing contract. For simplicity, we refer to this as a contract throughout this testimony.



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contract price. In addition, to ensure that BNFL can obtain affordable private financing, DOE has agreed to repay much of the project's debt if BNFL defaults on its loans and DOE terminates the contract. This is an unusual feature of a fixed-price contract because the government normally does not agree to pay a contractor's debt as an allowable cost. If this commitment were structured as a conventional loan guarantee, DOE would have had to estimate the potential subsidy cost over the term of the loans and have the budget authority to fund them before making the guarantees.

- The revised approach extends the completion date for processing the first portion of the waste from 2007 to 2017, and total costs rise from \$4.3 billion to \$8.9 billion, including \$2 billion in DOE's support costs (in constant 1997 dollars). The increased costs are mainly the result of DOE's decision to build permanent facilities that will take longer and cost more to design and build and the higher financing costs and contractor profits involved in operating these facilities over a longer period of time. DOE estimates that this approach has the potential to save 26 to 36 percent over the contracting approaches it has used in the past. Because of questions about DOE's methodology for estimating savings, considerable caution is needed in assuming how much the revised approach will save.
- The revised approach represents a dramatic departure from DOE's original privatization strategy of shifting most financial risk to the contractor. The contract now calls for DOE to pay BNFL for most of the debt incurred in building and operating the facility if BNFL should default on its loans.<sup>2</sup> Thus, DOE faces a financial risk not initially contemplated on the project that could be in the billions of dollars. DOE agreed to assume this risk because it did not think BNFL would be able to obtain affordable financing unless the government provided some assurance that the loans would be repaid. DOE's financial risks are significant because the project has a number of technical uncertainties such as using waste treatment technology that has yet to be successfully tested at production levels on Hanford's complex and unique waste, and management challenges such as obtaining needed contracting expertise.
- In an attempt to avoid repeating past mistakes in managing large projects, DOE has identified additional expertise it needs and has developed several management tools to strengthen its oversight of the project. For example, DOE plans to have a team with about 80 members to manage this effort, and it has taken a number of steps to plan for better coordination among BNFL, the contractors providing support services at Hanford, and its own staff. The success of the project, however, will depend heavily on how well DOE

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<sup>2</sup>Under the terms of the contract, if the lenders declare BNFL in default and accelerate the debt due, DOE will terminate the contract for default or for the convenience of the government. In this event, DOE will pay BNFL, as an allowable cost, the outstanding principal amount of the loans plus all accrued and unpaid interest, less certain other adjustments.



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implements these plans. DOE has a history of not fully implementing its management and oversight plans, and there are some early indications on this project that DOE may be having difficulty ensuring that the proper expertise is in place and fully funding project support activities.

Mr. Chairman, before discussing the details of our findings, we would like to briefly explain DOE's strategy for cleaning up Hanford's tank waste.

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## Background

Hanford's aging underground tanks contain about 54 million gallons of highly radioactive waste. DOE currently estimates the total cost of cleaning up the tank waste at more than \$50 billion (in actual year dollars). To convert the waste into a form for more permanent storage, the waste will be separated into high-level and low-activity components<sup>3</sup> and then, through a process called vitrification, converted into a glass-like material that can be poured into steel containers where it will harden. The immobilized high-level waste will be stored on-site for eventual shipment to a national repository, while the low-activity waste will be permanently disposed of on the Hanford Site.

DOE envisioned that two contractors would build and operate demonstration facilities that would initially treat at least 6 percent of the waste. DOE referred to this part of the waste treatment effort as phase I. DOE estimated that phase I would last at least until 2007 and cost about \$3.2 billion and another \$1.1 billion in contract support costs, for a total of about \$4.3 billion. In September 1996, DOE awarded a fixed-price contract for \$27 million to each of the two contractor teams to begin phase I by developing preliminary facility designs and other preliminary project plans. One team was led by BNFL and the other team was led by Lockheed Martin Advanced Environmental Systems (Lockheed). In phase II, contractors would compete for a contract to process the remaining tank waste.

DOE's experience during the initial part of phase I led to a change in the contracting approach. In May 1998, after reviewing the preliminary designs and plans submitted by the two competing teams, DOE decided to continue phase I with only one contractor—BNFL. On August 24, 1998, DOE signed a fixed-price contract with BNFL for \$6.9 billion to continue with phase I. DOE estimated that its other costs related to supporting BNFL's efforts would be

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<sup>3</sup>Hanford's tanks contain highly radioactive waste. When separated into high-level and low-activity components, most of the waste will be low-activity radioactive waste. Low-activity waste has a wide range of characteristics, but most of it contains small amounts of radioactivity in large volumes of materials. The tanks also contain hazardous chemicals and heavy metals.



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about \$2 billion, bringing the project's total estimated cost to about \$8.9 billion.

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## DOE's Current Approach Differs Significantly From Original Project Strategy

DOE's August 1998 contract with BNFL is a substantial departure from DOE's original privatization strategy. According to DOE, changes to its initial approach were made to optimize the technical approach and to make the project financially feasible or to reduce the likelihood of performance failure. These changes fall into four main areas: competition, financial issues, facility issues, and schedule revisions.

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### Competition

Unlike DOE's original approach, the project no longer includes competition between contractors. DOE and outside expert reviewers found that the approach set forth by the Lockheed team presented an unacceptably high technical risk in attaining DOE's cleanup goals. In contrast, DOE concluded that BNFL's technical approach was sound, using technologies for waste treatment and vitrification that were well developed and had been used in other waste treatment situations. Therefore, DOE authorized only BNFL to proceed through the remainder of phase I. The extent to which competition will be present in phase II is unknown.

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### Financial Issues

DOE's approach to financing the project has shifted from requiring the contractor to obtain all needed financing to a strategy of agreeing to repay BNFL's debts above its equity, insurance, and other limited funds if BNFL defaults on its loans and DOE terminates the contract. DOE officials said that the government's commitment to repay the contractor's debt was needed, in large part, to make the project financially feasible. Government backing of the private debt is an unusual feature for a fixed-price contract because the government normally does not agree to pay a contractor's debt as an allowable cost. Another change was that neither contractor was willing to commit to a fixed-unit price and schedule without adding significant contingency to the price of the contract. The August 1998 contract identified a target price and set August 2000 as the date at which the unit price will be fixed and BNFL's funding commitments will be established.

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### Facility Issues

The original proposal included temporary facilities that were estimated to have a useful life of approximately 10 years. According to DOE, however, both BNFL and Lockheed concluded that shorter-term facilities were not



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feasible and that more permanent facilities were needed to provide the required levels of safety, operability, and maintainability. The contract now requires the waste treatment facilities to be designed to operate for a minimum of 30 years and have the capability to increase capacity. DOE said that although this approach means much more expensive facilities than originally anticipated and, therefore, an increase in project costs for phase I, the more permanent and expandable facilities allow DOE more flexibility and options in how the waste cleanup is completed.

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## Schedule Revision

In addition to more permanent, costly facilities, the new contract extends the design period and delays the start of construction about 19 months beyond what was originally planned. Both BNFL and Lockheed indicated that additional time was needed to further develop the project's design and plans for meeting regulatory and permitting requirements. The contractors believed that adhering to the original schedule would carry too many uncertainties and that they would be unable to obtain needed financing for the project unless a more realistic schedule could be negotiated.

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## Different Approach to the Project Extended Schedule and Increased Costs

The current schedule and cost estimates for the project are substantially greater than DOE's original estimates. In 1996, DOE estimated that in the first phase of the project, two contractors would process 6 percent of the waste by 2007 and up to 13 percent of the waste by 2011. DOE is now estimating that the first phase will last until at least 2017 and 10 percent of the waste will be processed. Design activities have been extended by 2 years, construction will take about 4 years longer, and the time to process the waste increased from 5 years to about 10 years.

Estimated costs for the project have also increased significantly. The total project costs for phase I, including DOE's support costs, increased from \$4.3 billion in the original estimate to \$8.9 billion in the current estimate (in constant fiscal year 1997 dollars). The waste processing facilities now being designed will cost nearly \$1 billion more to build than the demonstration facilities DOE originally proposed. Because of the longer period during which investors will expect a return on investments, equity and debt financing costs are expected to increase from about \$1 billion to more than \$3 billion. And, the average cost to process waste will double from \$760,000 per metric ton to \$1.5 million per metric ton.



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## Cost Savings Estimate Must Be Viewed With Caution

Despite the dramatic increase in estimated costs for this project, in July 1998, DOE estimated that its revised approach for phase I would provide savings of 26 to 36 percent when compared with two alternatives—a management and operations (M&O) contract or a cost-reimbursement contract with performance-based incentives. The savings estimate of 36 percent was based on comparing the proposed BNFL fixed-price approach with an M&O approach based on past Hanford management and operating contractor cost data; the estimate of 26 percent was based on a comparison with the estimated cost for BNFL to perform the work under a cost-reimbursement contract. However, our review of DOE's most recent estimates indicate that the savings amounts should be viewed with considerable caution. Specifically,

- Comparing its revised approach to a M&O contracting approach is not meaningful because DOE would no longer seriously consider using such an approach. DOE's cost savings analysis could be more meaningful if it included a range of contracting and financing options such as various combinations of government and private financing.
- For the contract alternatives DOE considered in its analysis, the margin of error was plus or minus 40 percent, meaning that the actual cost could be up to 40 percent less than or greater than the estimate presented. Because the order of magnitude estimates are subject to so much variability, it is difficult to assign much credence to this overall savings estimate.
- Cost growth estimates were not used consistently. For the comparison between a fixed-price contract and a cost-reimbursement contract with performance incentives, DOE assumed that cost growth would be 68 percent for the cost-reimbursement contract, and the fixed-price contract would have no cost growth. However, other evidence indicates that fixed-price contracts may have greater cost growth than cost-reimbursement contracts. Specifically, a DOE funded study found that fixed-price contracts had greater cost growth than cost-reimbursement contracts.<sup>4</sup>

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## Revised Approach Shifts Significant Financial Risk to the Government

Under the revised contract approach, DOE faces a substantial financial risk that could be in the billions of dollars. This risk comes mainly in the form of an agreement to pay BNFL for much of the debt incurred in constructing and operating the waste treatment facilities if BNFL defaults on its loan payments and DOE terminates the contract. This agreement has the same practical effect as a loan guarantee and is a dramatic departure from the

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<sup>4</sup>See Department of Energy, Office of Environmental Restoration and Waste Management, Project Performance Study, Independent Project Analysis, Inc. (Reston, Va. Nov. 30, 1993).



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original privatization strategy.<sup>5</sup> If DOE had provided a guarantee for BNFL's loans from a private lender, the Federal Credit Reform Act would have required DOE to estimate the net present value of the subsidy cost of the loan guarantee over the term of the loan and to have budget authority available for this full cost before the guarantee could be provided.

The amount of DOE's potential liability is unknown, because the amount of borrowing that will be covered under the commitment will likely not be determined until the contract price is established in August 2000. However, BNFL's vice president and project manager told us that DOE's potential liability could be as much as \$3 billion. He said that in the case of a default, \$3 billion is about the maximum debt that would be outstanding after BNFL's equity and contingency funds were applied.<sup>6</sup>

DOE's financial risks hinge on a number of factors that could potentially affect the project. We identified six main types of factors, which we believe merit continued attention as the project proceeds.

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## Unverified Technology

BNFL officials acknowledge that although the technology they plan to use has been successfully applied in other settings, it has been tested only on small amounts of Hanford waste in laboratories and has not been used at production facilities to vitrify the unique types of waste at Hanford. Under DOE's original approach, the success of the selected technologies was to be demonstrated in temporary plants; in DOE's revised approach, permanent plants will be built.

BNFL has developed various other approaches to deal with the need to ensure that the technology will work. These include conducting tests on certain aspects of the technology at existing facilities at other DOE sites and in the United Kingdom and constructing a prototype melter for the

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<sup>5</sup>DOE's agreement to pay BNFL its outstanding debt as an allowable cost if the contract is terminated is close to, but not the same as, a federal loan guarantee. DOE's agreement is a commitment DOE has with BNFL, not with BNFL's lenders, and therefore it does not meet the definition of a loan guarantee, which is provided directly to a lender, not to the borrower. Agencies need legislative authority to provide a loan guarantee.

<sup>6</sup>Debt for financing the project can be of two types: debt that is secured by BNFL's assets (called "recourse" debt) and debt that is secured only by the revenues BNFL expects to receive from treating the waste (called "nonrecourse" debt). The agreement between DOE and BNFL applies only to recourse debt. However, to this point, lenders appear reluctant to provide a significant amount of nonrecourse funding because of the project's numerous technical and operating risks. DOE's risk is made even more substantial because BNFL is a separate corporation from its parent company and, therefore, lenders may not be able to pursue BNFL's parent company in the event of a contract termination.



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low-activity waste vitrification process.<sup>7</sup> DOE expects to hire experts to review BNFL's demonstration plans and testing results.

Under its revised approach, DOE retains a significant part of the risk for the success of this technology. In the worst case, if demonstration activities fail or prove inadequate to ensure the success of full-scale operations, the overall project may fail, and DOE will be liable for paying off a significant portion of BNFL's debt after BNFL's resources are exhausted. If demonstration activities show that the technology is usable but flawed, treatment facilities may require expensive retrofitting to make them viable. This could raise the cost of the fixed-price contract that DOE will negotiate with BNFL.

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## Rapid Plant Construction

Although the revised approach gives BNFL additional time to design the waste treatment and vitrification facilities, the schedule still poses some potential risk. To give BNFL more time to design the facilities, DOE set back the start of construction by about 2 years. However, even with this change, construction will begin well before all of the design work is completed. BNFL officials estimate that overall design work will be less than 50 percent complete at the start of construction and acknowledged that conducting simultaneous design, construction, and technology testing carries some risk. To reduce this risk, BNFL is performing a periodic risk assessment to ensure that design and technology testing concerns will be addressed as quickly as possible in the next 24 months.

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## Safety and Regulatory Issues

Another factor potentially affecting the success of the project—and therefore DOE's financial risk—is whether the safety and other regulatory requirements can be successfully met. For example, DOE's Regulatory Unit raised 90 issues with safety documents that BNFL submitted in January 1998. The manager of the Regulatory Unit described the quality of the BNFL safety documents as poor and said that the next set of safety documents, submitted in August 1998, was also poorly done. Unless the required safety documentation is approved, BNFL will be unable to start construction on schedule.

The BNFL project manager attributed the safety documentation problems primarily to the early level of the project's design and said that BNFL will greatly increase the staff addressing safety-related issues during the rest of

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<sup>7</sup>The melter is a large furnace that heats the waste to a high temperature and combines it with other materials to produce a glass-like product.



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phase I. BNFL also has recently hired an experienced nuclear facilities licensing manager to lead this effort. DOE has also taken steps to help ensure that BNFL is addressing safety issues. For example, DOE has negotiated into the contract provisions that (1) require periodic meetings between its regulatory staff and BNFL to discuss safety issues and (2) provide for DOE's attendance at BNFL's safety committee facility design review meetings.

The project also presents another regulatory challenge. DOE planned to have the Occupational Safety and Health Administration (OSHA) regulate worker safety at the plant. However, in May 1998, OSHA declined to assume responsibility, citing a need first for statutory and regulatory changes to be in place, as well as a full complement of the resources required. If OSHA does not regulate worker safety, then DOE must do so. The manager of DOE's Regulatory Unit said that if this issue is not resolved by January 2000, his unit will assume responsibility for regulating worker safety so that construction can begin on schedule.

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## DOE's Support Activities

DOE is responsible for the following major support activities: sampling and analyzing tank waste (characterization); providing infrastructure, which includes roads, water, electricity, and wastewater treatment; retrieving waste, which requires DOE to retrieve waste from the tanks and deliver it to BNFL while keeping the chemical makeup of the waste within specified ranges; and storing and disposing of waste after processing, which requires DOE to temporarily store the high-level waste and permanently store low-activity waste. DOE estimates that support activities will cost about \$2 billion, including about \$600 million for waste retrieval, \$40 million for characterization, and about \$370 million for waste storage and disposal. Although support activities are essential to project success, many of them are still in the planning stages and potential problems are not yet apparent. At this time, the areas that appear to be most prone to problems are waste retrieval and waste storage and disposal. DOE's site support contractor concluded that these two problems have a high risk of adversely affecting the project. As a result, DOE could have to make idle facility payments. In response, the site support contractor identified a set of mitigating actions that it believes will reduce the risk that the problems will adversely affect the project.

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## DOE's Funding Stream for the Project

DOE's ability to fund the project within its own budget is an important factor in ensuring that lack of funding does not lead to project termination.



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DOE estimates that it will need more than \$10 billion in actual year dollars from fiscal year 1999 through 2017 to fund the \$6.9 billion project cost—an average of \$537 million annually. This funding represents a substantially increased need for funding at the Hanford Site, where current annual budgets for all on-site cleanup activities total about \$1 billion. If DOE could not provide funding for the privatization project when needed, the contract would likely be terminated, triggering DOE's liability to pay BNFL for the amounts borrowed against the company's assets.

DOE officials said they did not yet have a detailed funding plan for how they would find the additional funding within their budget. However, assuming no significant increase from the Congress, DOE indicated that a major source of funds would likely be funding made available when other DOE sites, such as Rocky Flats and Fernald, are cleaned up and closed. Given DOE's track record in completing environmental cleanup projects, however, we are concerned that the funds may not be available when they are needed.

Another issue that could potentially affect DOE's ability to ensure that sufficient funding is available for the project relates to how the new contracting approach is classified in the budget. Because of budget limitations contained in the Budget Enforcement Act, cost estimates are prepared for programs, including projects in DOE's privatization program, to ensure that the limitations are not exceeded. If a federal agency offered a federal government guarantee to a private lender for a contractor's debt financing, the agency would have to estimate the subsidy cost of the loan guarantee. This is a complex process and is based on the risk of a default or nonpayment of the loans and other factors. The agency would then need the budget authority for the full net present value of the subsidy cost before it could make the guarantee.

Although the tank waste project is not structured as an explicit loan guarantee, there is an increase in the government's potential liability associated with making BNFL's loans an allowable contract cost. Neither DOE nor the Office of Management and Budget has estimated this potential cost. This is of consequence because it affects how much funding DOE will have to have on hand for the project, and when.

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### Inconsistencies With Guidelines for Fixed-Price Contracts

In an effort to balance risks and realize cost savings, DOE selected a fixed-price contracting approach for the project. Federal acquisition regulation guidelines note that fixed-price contracting works best when



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the possibility is low for changes with cost and schedule implications. However, the BNFL contract cites at least 15 events, such as regulatory changes or failure to provide waste on a timely basis, that could cause cost or schedule increases. The consequence of such changes is that they would constitute a potential basis for adjusting the fixed price or paying agreed-upon additional amounts.

Federal guidelines state that another factor contributing to the successful use of fixed-price contracting is competition, which helps determine a price that minimizes the cost to the government while providing a fair profit to the contractor. DOE's revised approach removes competition as a check on price. Instead, DOE has required BNFL to provide certified cost or pricing information for use in evaluating BNFL's basis for its proposed fixed unit prices. Without competition, however, DOE may not have the same assurance of obtaining the best value for the negotiated price.

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## Effective DOE Oversight Is Critical to Project Success

Managing this large, complex project presents a significant challenge to DOE. The agency's continuing challenge will be to translate the plans it has made into sustainable oversight efforts that are capable of overcoming problems that have plagued many past waste cleanup projects.

DOE has had difficulty managing other large projects. Our past reviews have shown a consistent pattern of poor management and oversight by DOE. For example, in our 1996 report on DOE's major system acquisition projects (generally projects costing \$100 million or more), we reported that at least half of the ongoing projects and most of the completed ones had cost overruns and/or schedule slippage.<sup>8</sup> Some of the reasons for cost overruns and schedule slippage included inadequate project oversight and insufficient attention to technical, institutional, and management issues. In addition, our reviews of individual DOE cleanup projects such as the Defense Waste Processing Facility at Savannah River, the Pit 9 cleanup at Idaho Falls, and the Spent Fuel Storage Project at Hanford all identified problems with DOE's oversight activities as factors contributing to project difficulties.

At least in part to respond to these past difficulties, DOE has developed several systems and processes to manage the tank waste project at Hanford and has subjected its plans to outside review. Despite these efforts, however, outstanding issues concerning technical staff, site

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<sup>8</sup>See Department of Energy: Opportunity to Improve Management of Major System Acquisitions (GAO/RCED-97-17, Nov. 26, 1996).



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support activities, and project administration may keep DOE from being fully prepared to oversee the project.

Technical staff: DOE has established a team eventually expected to number about 80 technical and managerial staff to oversee the project. As of August 31, 1998, there were about 30 vacancies, including key staff such as the Deputy Project Manager and five of nine DOE staff in the contract management group. DOE's Director of Contract Reform and Privatization said that the Hanford unit does not have all of the technical skills necessary to ensure success in overseeing the project. He was especially concerned about the shortage of contract expertise related to administering fixed-price contracts. According to DOE's contracting officer at Hanford, none of the current DOE staff are experts in fixed-priced contracting. DOE officials plan to hire these and other needed staff during fiscal year 1999.

Site support activities: Also critical to the project's success will be the support that site contractors must provide in preparing infrastructure improvements, retrieving waste, and removing and storing the containers of vitrified material. Outside reviewers commissioned by DOE and the contractor managing the Hanford site have concluded that the support could be provided if adequate funding was forthcoming. However, DOE and tank farm officials said that the project is funded at about \$23 million less than needed for fiscal year 1999. DOE has requested full funding for fiscal year 2000, but the budget has not yet been finalized. According to the Director of the Waste Disposal Division, not fully funding support activities in the next couple of years could delay the project.

Project administration: Our past work on other DOE projects indicates that carefully administering the contract may also be critical to ensuring that DOE and the contractor work together effectively. DOE has paid considerable attention to developing an approach to overseeing BNFL's operations and among other things has

- followed a systems engineering process that involved developing 23 "interface control documents" for those areas such as infrastructure, emergency response, and permitting where DOE or the site contractor have interrelationships with the BNFL contract and
- specified in the contract that BNFL must deliver completed test reports to DOE for numerous activities, such as validation of chemical processes, qualification of proposed products, and effectiveness of a nonradioactive pilot melter.



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The potential problem is not with DOE's efforts to date but with its willingness to fully implement the oversight plans it has developed for the project. Our work over several years and on a variety of DOE activities has disclosed a consistent pattern of failure on the part of DOE to fully implement the plans that it develops. For example, in 1997 we reported<sup>9</sup> that two projects at the Fernald, Ohio, site had weaknesses, including insufficient DOE oversight of the contractor, inadequate testing of the technology, and delays in completing planning documents. These problems contributed to a \$65 million cost overrun and almost 6 years of schedule slippage. More recently, in a review of DOE's management of contaminated soils above the groundwater at Hanford,<sup>10</sup> we found that although DOE drafted a management plan by 1994, it never implemented the plan. Four years later, after admitting that the tank waste has leaked into the groundwater, DOE has still not implemented a comprehensive management strategy.

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Mr. Chairman, in the report we are releasing today, we recommended that DOE take immediate action to fully implement the project's management and oversight plan, and we suggested to the Congress that an additional review of the project at the end of the extended design phase would be appropriate given the many uncertainties and decisions that remain.

Thank you, Mr. Chairman and Members of the Subcommittee. That concludes our testimony. We would be pleased to respond to any questions that you may have.

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<sup>9</sup>Department of Energy: Management and Oversight of Cleanup Activities at Fernald (GAO/RCED-97-63, Mar. 14, 1997).

<sup>10</sup>Nuclear Waste: Understanding of Waste Migration at Hanford is Inadequate for Key Decisions (GAO/RCED-98-80, Mar. 13, 1998).